

Claims

1. A device for contact-less measurement of distances (10, 20) in multiple directions of an electrically conductive body (2, 22) comprising a plurality of inductive elements (1, 4, 7), characterized in that at least one (1) of the plurality of inductive elements (1, 4, 7) is placed essentially around the body (2), and in that the other inductive elements or other magnetic field sensors (4, 7) are provided in the vicinity of said one inductive element (1).
2. The device according to claim 1, wherein the inductive elements (1, 4, 7) are coils, especially printed coils.
3. The device according to claim 2, wherein the other coils (4, 7) are single coils placed at different angular positions around the body (2) and said one coil (1) is wound around the body (2).
4. The device according to claim 2 or 3, wherein a high frequency current is fed to said one coil (1) and an output signal from the other coils (4, 7) is detected.
5. The device according to one of claims 1 to 3, wherein a high frequency current is fed to an inductive element (1) wound around the body (2), wherein said frequency is high enough so that a substantial part of the generated magnetic field cannot enter the conductive body (2).
6. The device according to any preceding claim, wherein the other coils (4, 7) are provided in an even number and wherein opposite coils are differentially coupled.

7. The device according to any preceding claim wherein the other coils (4, 7) are provided with capacitances in parallel to form resonant circuits.

8. The device according to any preceding claim, wherein the body (2) comprises a flange part (22) and wherein further single coils (7) are placed at different angular positions around the body (2) in vicinity of the surface of the flange part (22).

9. Use of the device according to any of claims 1 to 8 for angle detection of a joystick, a steering gear, a rotor of a motor, or computer input means.

10. Use of the device according to any of claims 1 to 8 for controlling the position of a magnetic bearing.